

IN THE CLAIMS:

- 1 1. (Cancelled)
- 1 2. (Currently Amended) The system of claim ~~1~~ 60 wherein the user interface system com-
2 prises a command line interface (CLI) configured to support the command set.
- 1 3. (Currently Amended) The system of claim ~~1~~ 60 wherein the command set further com-
2 prises an igroup command that determines whether a set of initiators may utilize data ac-
3 cess command proxying.
- 1 4. (Original) The system of claim 3 wherein the set of initiators comprises at least one
2 fibre channel world wide name.
- 1 5. (Original) The system of claim 3 wherein the set of initiators comprises one or more
2 iSCSI identifiers.
- 1 6. (Original) The system of claim 3 wherein the igroup command sets an igroup option to
2 determine whether members of a set of initiators may use a partner port for proxying data
3 access command.
- 1 7. (Original) The system of claim 3 wherein the command set further comprises a cfmode
2 command that sets a cluster mode for the clustered storage system.
- 1 8. (Original) The system of claim 7 wherein the cluster mode enables the clustered stor-
2 age system to proxy data access requests received by a first storage system in the clus-
3 tered storage system to a second storage system in the clustered storage system.

1 9. (Original) The system of claim 7 wherein the cluster mode enables a first storage sys-
2 tem in the clustered storage system to assume an identity of a second storage system in
3 the clustered storage system.

1 10. (Original) The system of claim 7 wherein the cluster mode enables proxying of data
2 access requests received by a first storage system in the clustered storage system to a sec-
3 ond storage system in the clustered storage system and further enables the first storage
4 system to assume an identity of the second storage system.

1 11. (Currently Amended) The system of claim ~~4~~ 60 wherein the command for setting a
2 cluster mode comprises a cfmode command.

1 12. (Currently Amended) The system of claim ~~4~~ 60 wherein the user interface system fur-
2 ther comprises a graphical user interface having functionality to implement the command
3 set.

1 13. (Cancelled)

1 14. (Currently Amended) The method of claim ~~43~~ 63 wherein the cluster mode comprises
2 a partner mode; and
3 wherein the clustered storage system is enabled to proxy data access requests re-
4 ceived by a first storage system in the clustered storage system to a second storage sys-
5 tem.

1 15. (Currently Amended) The method of claim ~~43~~ 63 wherein the cluster mode comprises
2 a standby mode; and
3 wherein a first storage system in the clustered storage system is enabled to assume
4 an identity of a second storage system in the clustered storage system.

- 1 16. (Currently Amended) The method of claim ~~43-63~~ further comprising providing a GUI
2 implementing commands available through the user interface system.
- 1 17. (Currently Amended) The method of claim ~~43-63~~ further comprising providing a GUI
2 window for setting a cluster mode of the clustered storage system.
- 1 18. (Previously Presented) The method of claim 16 further comprising providing a GUI
2 window for setting a proxy option for an initiator group.
- 1 19. (Cancelled)
- 1 20. (Currently Amended) The system of claim ~~49-64~~ further comprising means for deter-
2 mining whether a set of initiators may utilize data access command proxying.
- 1 21. (Currently Amended) The system of claim ~~49-64~~ wherein user interface means further
2 comprises means for determining whether a set of initiators may utilize data access com-
3 mand proxying.
- 1 22. (Original) The system of claim 21 wherein the set of initiators comprises at least one
2 fibre channel world wide name.
- 1 23. (Original) The system of claim 21 wherein the set of initiators comprises one or more
2 iSCSI identifiers.
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- 1 24. (Currently Amended) The system of claim ~~49-64~~ wherein the cluster mode enables
2 the clustered storage system to proxy data access requests received by a first storage sys-
3 tem in the clustered storage system to a second storage system in the clustered storage
4 system.

1 25. (Currently Amended) The system of claim ~~49-64~~ wherein the cluster mode enables a
2 first storage system in the clustered storage system to assume an identity of a second
3 storage system in the clustered storage system.

1 26. (Currently Amended) The system of claim ~~49-64~~ wherein the cluster mode enables
2 proxying of data access requests received by a first storage system in the clustered stor-
3 age system to a second storage system in the clustered storage system and further enables
4 the first storage system to assume an identity of the second storage system.

1 27. (Cancelled)

1 28. (Currently Amended) The computer readable medium of claim ~~27-65~~ wherein the
2 cluster mode comprises a partner mode; and
3 wherein the clustered storage system is enabled to proxy data access requests re-
4 ceived by a first storage system in the clustered storage system to a second storage sys-
5 tem.

1 29. (Currently Amended) The computer readable medium of claim ~~27-65~~ wherein the
2 cluster mode comprises a standby mode; and
3 wherein a first storage system in the clustered storage system is enabled to assume
4 an identity of a second storage system in the clustered storage system.

1 30. (Currently Amended) The computer readable medium of claim ~~27-65~~ further compris-
2 ing the step of providing a GUI implementing commands available through the user inter-
3 face system.

1 31. (Currently Amended) The computer readable medium of claim ~~27-65~~ further compris-
2 ing the step of providing a GUI window for setting a cluster mode of the clustered storage
3 system.

1 32. (Currently Amended) The computer readable medium of claim ~~27-65~~ further compris-
2 ing the step of providing a GUI window for setting a proxy option for an initiator group.

1 33. (Cancelled)

1 34. (Currently Amended) The system of claim ~~3366~~, wherein the interface comprises a
2 command line interface (CLI) configured to support the command set.

1 35. (Currently Amended) The system of claim ~~3366~~, wherein the command set further
2 comprises an igroup command that determines whether a set of initiators may utilize data
3 access command proxying.

1 36. (Previously Presented) The system of claim 35, wherein the set of initiators comprises
2 at least one fibre channel world wide name.

1 37. (Previously Presented) The system of claim 35, wherein the set of initiators comprises
2 one or more iSCSI identifiers.

1 38. (Previously Presented) The system of claim 35, wherein the igroup command sets an
2 igroup option to determine whether members of a set of initiators may use a partner port
3 for proxying data access command.

1 39. (Currently Amended) The system of claim ~~3366~~, wherein the cluster mode enables
2 the clustered storage system to proxy data access requests received by a first storage sys-
3 tem in the clustered storage system to a second storage system in the clustered storage
4 system.

1 40. (Currently Amended) The system of claim 3366, wherein the cluster mode enables a
2 first storage system in the clustered storage system to assume an identity of a second
3 storage system in the clustered storage system.

1 41. (Currently Amended) The system of claim 3366, wherein the cluster mode enables
2 proxying of data access requests received by a first storage system in the clustered stor-
3 age system to a second storage system in the clustered storage system and further enables
4 the first storage system to assume an identity of the second storage system.

1 42. (Cancelled)

1 43. (Currently Amended) The method of claim 4267, wherein the interface is a command
2 line interface.

1 44. (Currently Amended) The method of claim 4267, wherein the interface is a graphical
2 user interface.

1 45. (Currently Amended) The method of claim 4267, wherein the selected cluster mode
2 enables the clustered storage system to proxy data access requests received by a first stor-
3 age system in the clustered storage system to a second storage system in the clustered
4 storage system.

1 46. (Currently Amended) The method of claim 4267, wherein the selected cluster mode
2 enables a first storage system in the clustered storage system to assume an identity of a
3 second storage system in the clustered storage system.

1 47. (Currently Amended) The method of claim 4267, wherein the cluster mode enables
2 proxying of data access requests received by a first storage system in the clustered stor-

3 age system to a second storage system in the clustered storage system and further enables
4 the first storage system to assume an identity of the second storage system.

1 48. (Cancelled)

1 49. (Currently Amended) The system of claim 48, wherein the plurality of failure
2 modes comprises a standby mode, a partner mode, a dual fabric mode, and a mixed
3 mode.

1 50. – 58. (Cancelled)

1 59. (Currently Amended) The system of claim 1-60 wherein the igroup allows a user to
2 define related clients by a logical name.

1 60. (Currently Amended) A system configured to simplify management of a clustered
2 storage system having a plurality of failover modes, the system comprising:
3 a user interface system that allows a user to define a plurality of failover modes in
4 the clustered storage system, wherein each failover mode automatically configures one or
5 more ports on a selected storage system or a partner storage system in response to a
6 failover condition, wherein the partner storage system is configured to receive requests
7 directed to the partner storage system and the selected storage system, each failover mode
8 further configuring the partner storage system with a world wide node name and a world
9 wide port name from the selected storage system to allow the partner storage system to
10 assume an identity of the selected storage system; and
11 a command set implemented by the user interface system, the command set in-
12 cluding a first command and a second command,
13 the first command configured to permit the user to specify a specific initia-
14 tor group (igroup) to utilize one or more ports for data access proxying in the
15 clustered storage system wherein the igroup is a logical named entity assigned to

16 one or more addresses that are associated with one or more initiators~~The system~~
17 ~~of claim 59 wherein~~ and the igroup is used by higher layer vdisk commands to al-
18 low data access proxying to a partner storage system,
19 the second command configured to set a cluster mode, the cluster mode
20 including at least one of the plurality of failover modes in which a storage system
21 is to operate,
22 wherein the command set further provides information specific to the failover op-
23 erations of the one or more ports to the user on the user interface system.

1 61. (Currently Amended) The system of claim ~~4~~60 wherein data access at a lun level is
2 not affected by reorganization of the initiators.

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2 62. (Currently Amended) The system of claim ~~4~~60 wherein data access proxying com-
3 prises receiving, at a proxy port of a first storage system, a command to be forwarded to a
4 second storage system for execution.

Please add new claims 63 et seq:

1 63. (New) A method for simplifying management of a clustered storage system having a
2 plurality of failover modes, comprising:

3 providing a user interface system that allows a user to define a plurality of
4 failover modes in a clustered storage system wherein each failover mode automatically
5 configures one or more ports on a selected storage system or a partner storage system in
6 response to a failover condition, wherein the partner storage system is configured to re-
7 ceive requests directed to the partner storage system and the selected storage system, each
8 failover mode further configuring the partner storage system with a world wide node
9 name and a world wide port name from the selected storage system to allow the partner
10 storage system to assume an identity of the selected storage system; and

11 executing a command set supported by the user interface system, the command
12 set including a first command and a second command,

13 the first command configured to permit the user to specify a specific initia-
14 tor group (igroup) to utilize one or more ports for data access proxying in the
15 clustered storage system wherein the igroup is a logical named entity assigned to
16 one or more addresses that are associated with one or more initiators and the
17 igroup is used by higher layer vdisk commands to allow data access proxying to a
18 partner storage system,

19 the second command configured to set a cluster mode for the clustered
20 storage system, the cluster mode defining one of a plurality of failover modes in
21 which a storage system is to operate,

22 wherein the command set further provides information specific to the failover op-
23 erations of the one or more ports to the user on the user interface system, and each
24 failover mode automatically configures one or more ports on a selected storage system or
25 a partner storage system in response to a failover condition, the partner storage system
26 configured to receive requests directed to the partner storage system and the failed stor-
27 age system.

1 64. (New) A system configured to simplify management of a clustered storage system
2 having a plurality of failover modes, the system comprising:

3 a user interface means for implementing a command line interface that allows a
4 user to define a plurality of failover modes in a clustered storage system wherein each
5 failover mode automatically configures one or more ports on a selected storage system or
6 a partner storage system in response to a failover condition, wherein the partner storage
7 system is configured to receive requests directed to the partner storage system and the
8 selected storage system, each failover mode further configuring the partner storage sys-
9 tem with a world wide node name and a world wide port name from the selected storage
10 system to allow the partner storage system to assume an identity of the selected storage
11 system; and

means for executing a command set, the command set including a first command and a second command,

the first command configured to permit the user to specify a specific initiator group (igroup) to utilize one or more ports for data access proxying in the clustered storage system wherein the igroup is a logical named entity assigned to one or more addresses that are associated with one or more initiators and the igroup is used by higher layer vdisk commands to allow data access proxying to a partner storage system, and

the second command configured to set a cluster mode, the cluster mode defining one of a plurality of failover modes in which a storage system is to operate,

wherein the command set further provides information specific to the failover operations of the one or more ports to the user on the user interface system.

65. (New) A non-transitory computer readable medium containing executable program instructions executed by a processor, for simplifying management of a clustered storage system having a plurality of failover modes, the computer readable medium comprising:

program instructions that provide a user interface system that allows a user to define a plurality of failover modes in a clustered storage system,

wherein each failover mode automatically configures one or more ports on a selected storage system or a partner storage system in response to a failover condition, and

wherein the partner storage system is configured to receive requests directed to the partner storage system and the selected storage system, each failover mode further configuring the partner storage system with a world wide node name and a world wide port name from the selected storage system to allow the partner storage system to assume an identity of the selected storage system; and

program instructions that execute a command set supported by the user interface system to set a cluster mode for the clustered storage system, the command set including a first command and a second command,

the first command configured to permit the user to specify a specific initiator group (igroup) to utilize one or more ports for data access proxying in the clustered storage system wherein the igroup is a logical named entity assigned to one or more addresses that are associated with one or more initiators and the igroup is used by higher layer vdisk commands to allow data access proxying to a partner storage system,

the second command the cluster mode defining one of a plurality of failover modes in which a storage system is to operate,

wherein the command set further provides information specific to the failover operations of the one or more ports to the user on the user interface system.

66. (New) A system, comprising:

an interface that defines a plurality of failover modes for a clustered storage system that allows a user to define a plurality of failover modes in a clustered storage system

wherein each failover mode automatically configures one or more ports on a selected storage system or a partner storage system in response to a failover condition, and

wherein the partner storage system is configured to receive requests directed to the partner storage system and the selected storage system, each failover mode further configuring the partner storage system with a world wide node name and a world wide port name from the selected storage system to allow the partner storage system to assume an identity of the selected storage system; and

a command set implemented by the interface, the command set including a first command and a second command,

the first command configured to permit the user to specify a specific initiator group (igroup) to utilize one or more ports for data access proxying in the

17 clustered storage system wherein the igroup is a logical named entity assigned to
18 one or more addresses that are associated with one or more initiators and the
19 igroup is used by higher layer vdisk commands to allow data access proxying to a
20 partner storage system,

21 the second command configured to set a cluster mode using one of the
22 plurality of failover modes, in which a storage system is to operate,
23 wherein the command set further provides information specific to the failover op-
24 erations of the one or more ports to the user on the user interface system.

1 67. (New) A method, comprising:

2 providing an interface that defines a plurality of failover modes in a clustered
3 storage system wherein the cluster storage system includes a plurality of servers

4 wherein each failover mode automatically configures one or more ports on
5 a selected storage system or a partner storage system in response to a failover
6 condition, and

7 wherein the partner storage system is configured to receive requests di-
8 rected to the partner storage system and the selected storage system, each failover
9 mode further configuring the partner storage system with a world wide node name
10 and a world wide port name from the selected storage system to allow the partner
11 storage system to assume an identity of the selected storage system;

12 selecting a command set supported by the interface to set a cluster mode for the
13 clustered storage system, the command set including a first command and a second com-
14 mand,

15 the first command configured to permit the user to specify a specific initia-
16 tor group (igroup) to utilize one or more ports for data access proxying in the
17 clustered storage system wherein the igroup is a logical named entity assigned to
18 one or more addresses that are associated with one or more initiators and the
19 igroup is used by higher layer vdisk commands to allow data access proxying to a
20 partner storage system,

21 the second command configured the cluster mode defining one of a plural-
22 ity of failover modes in which a storage system is to operate,

23 wherein the command set further provides information specific to the
24 failover operations of the one or more ports to the user on the user interface sys-
25 tem; and

26 configuring the clustered storage system into the selected cluster mode.

1 68. (New) A system configured to simplify management of a clustered storage system
2 having a plurality of failover modes, the system comprising:

3 an interface system that defines a plurality of failover modes in a clustered storage
4 system automatically responding to a failover condition, wherein each failover mode con-
5 figures one or more ports on a selected server or a partner server in response to a failover
6 condition, each failover mode further configuring the partner storage system with a world
7 wide node name and a world wide port name from the selected storage system to allow
8 the partner storage system to assume an identity of the selected storage system; and

9 a command set implemented by the interface system, the command set including a
10 first command and a second command,

11 the first command configured to permit the user to specify a specific initia-
12 tor group (igroup) to utilize one or more ports for data access proxying in the
13 clustered storage system wherein the igroup is a logical named entity assigned to
14 one or more addresses that are associated with one or more initiators and the
15 igroup is used by higher layer vdisk commands to allow data access proxying to a
16 partner storage system,

17 the second command configured to set a cluster mode where the cluster
18 mode includes one of the plurality of failover modes in which a storage system is
19 to operate,

20 wherein the command set further provides information specific to the
21 failover operations of the one or more ports to the user on the user interface sys-
22 tem.